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How Did the 2003 Dividend Tax Cut Affect Stock Prices?

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Abstract

We test the hypothesis that the 2003 dividend tax cut boosted U.S. stock prices and thus lowered the cost of equity. Using an event-study methodology, we attempt to identify an aggregate stock market effect by comparing the behavior of U.S. common stock prices to that of European stocks and real estate investment trusts. We also examine the relative cross-sectional response of stock prices for high-dividend and low-dividend stocks. We find that U.S. large-cap and small-cap indexes do not outperform their European counterparts, nor REIT stocks, over the event windows, suggesting the absence of a notable aggregate stock market effect. Second, high-dividend-yield stocks outperformed low-dividend-yield stocks by a few percentage points over the event windows, consistent with the hypothesis that investors heavily discounted future dividends, though this outperformance appears to dissipate in subsequent weeks. Finally, non-dividend paying stocks are found to have outperformed the overall market by a small margin, but this result does not appear to be tied to tax-cut news, suggesting that non-tax factors were at play.

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1. Introduction

On May 28th of 2003 the President signed into law The Jobs and Growth Tax Relief Reconciliation Act of 2003 which, among other provisions, reduced the maximum tax rate on dividends from 38 to 15 percent. A related provision in the bill reduced the top rate on long-term capital gains taxes from 20 percent to 15 percent, thereby equalizing those two tax rates for the first time since 1990. The dividend tax cut was, perhaps, the most dramatic provision in the bill and was, almost certainly, the most contentious. Indeed, the bill only passed the Senate on a vote of 51-50, following weeks of wrangling, and up until the last day it remained unclear whether the bill would emerge with anything close to the significant cut in dividend taxes that was ultimately enacted.

During the debate leading up to enactment, many benefits were ascribed to the dividend tax cut. One of the main arguments was that reducing taxes on investment income would lower the cost of capital to business, stimulating investment and job creation. The lower cost of capital would be effected through a rise in U.S. corporate equity prices, which, as a side benefit, would boost spending through the wealth effect.[1] For instance, a Treasury official testified before Congress that, although the Treasury had not worked up its own estimate, "estimates [by others] of the impact on stock market valuations range from 5 percent to 15 percent (Fisher, 2003)." By capitalizing the CBO projection of annual flow of foregone dividend taxes, Poterba (2004) estimates that the dividend tax cut could have boosted the value of U.S. equities by roughly 6 percent. This issue is likely to remain relevant going forward as Congress considers extending the expiration date of the tax cut or eliminating dividend taxes entirely as proposed by the President's 2005 tax advisory panel (Tax Reform Panel, 2005).

In this paper, we test the hypothesis that the cut in capital taxation boosted U.S. stock prices, thereby lowering the cost of equity capital. We use an event-study methodology focused on time periods with notable positive news about the potential for passage of a dividend tax cut. We attempt to identify an aggregate market effect by comparing the behavior of U.S. common stock prices to the prices of securities which

[1] The other widely-cited benefit advanced by proponents of the bill was that the reduction in the dividend tax rate would encourage more companies to pay dividends, facilitating both the redistribution of capital resources and corporate governance reform. While Chetty and Saez (2005) document a substantial boost to dividends from the tax cut, Brown, et al. (2005) find that the tax cut had a more muted effect on *total* payouts because many firms offset the increase in dividends with less share repurchases.

should have seen little or no benefit from the tax cut. These benchmark securities include the stocks of European firms, in which the presence of U.S. investors – the beneficiaries of the tax law change – is relatively minor. We also compare stocks of real estate investment trusts (REITs), the distributions from which were already tax-advantaged and thus received no benefit from the dividend tax cut.

In addition, we analyze the cross-sectional impact of the positive dividend tax cut news by examining the response of stock prices across firms having different dividend policies. Given the uncertainty that always surrounds future tax policy, which was compounded in this case by sunset provisions and projections of significant budget deficits, investors might have heavily discounted the tax savings on future dividends. Consequently, stocks that were currently yielding high dividends should have been affected more by the tax cut than "growth" stocks, which would pay most of their dividends far into the future.

In short, we fail to find much, if any, imprint of the dividend tax cut news on the value of the aggregate stock market. U.S. large-cap and small-cap indexes do not appear to outperform either their European counterparts or REITs over the event windows. Despite the claims of the tax-cut proponents, this result may not be too surprising. As suggested above, investors' might have capitalized only a small part of the future tax benefits, due to the potentially temporary nature of the tax break. In addition, given the preponderance of tax-free investors, and the institutional investors that book dividends as ordinary income, the "marginal investor" might have benefited relatively little from the tax cut.

Consistent with this view, our cross-sectional analysis indicates that high-dividend yield stocks outperformed low-dividend yield stocks by a few percentage points over the event windows. However, even that small margin of outperformance appears to dissipate over the subsequent weeks. Finally, we find that, unlike low-dividend yield stocks, non-dividend paying stocks outperformed the market (though not high-dividend yield stocks) on a risk-adjusted basis during the event periods. At first glance this finding is surprising because the tax gains on these shares accrue in the more distant future. However, we show that the zero-dividend stocks' outperformance does not appear to be related to tax cut news. Rather, it seems to be linked to an upswing in investor sentiment that accompanied the resolution of uncertainty regarding the commencement of the war in Iraq.

Our cross-sectional findings do not conflict with the empirical results in Brown, Liang, and Weisbenner (2004) and Auerbach and Hassett (2005) who also conduct event studies around the dividend tax. Both of those studies use the cross-sectional variation in stock returns to test their hypotheses. Brown, Liang, and Weisbenner (2004) test for the role of executive share ownership on the level and composition of total payouts, while Auerbach and Hassett (2005) use the stock market response to the tax cut to evaluate the "new" versus the "traditional" view of dividend taxation. Neither analysis addresses the overall effect of the dividend tax cut on the U.S. stock market. Indeed, some of their inferences seem to require the *assumption* of a positive aggregate effect. Our results raise doubts about the Auerbach and Hassett (2005) interpretation of positive excess returns on zero-dividend stocks as a consequence of the dividend tax cut.

Dhaliwal, Krull and Li (2005) estimate the aggregate valuation effect induced by the tax act. They back out two ex ante estimates of the required return on equity using the level of stock prices and analysts earnings forecasts at two different dates. In principle, this approach controls for news about future cash flows, but it requires strong modeling choices and heroic assumptions about stability of the risk premium. Thus, their finding that the aggregate cost of capital declined seems largely attributable to their choice of event window – March 31st to June 30th. That window begins in the wake of an apparent peak in the market risk premium induced by uncertainty and anxiety regarding the probable invasion of Iraq. To the extent that changes in equity risk premiums are global, this highlights the benefit of using European stocks (and REIT shares) as controls.

2. Event Windows

For our analysis we define two narrow event windows when news on domestic political developments presumably raised the likelihood that a substantial dividend tax cut would be enacted – the shaded areas in Figure 1. The first event period surrounds the President's January 7th speech to the Economics Club of Chicago, when the dividend tax cut proposal was officially unveiled. Because the intention to propose a dividend tax cut appeared in the Washington Post on January 3rd (Allen and Milbank, 2003), the chosen window spans January 3-9, covering the period over which newspaper coverage initially spiked. One measure of media coverage is shown by the vertical bars in Figure 1, which

plot the daily number of news stories containing the topic of "dividends" and "taxes" in the 15 largest U.S. newspapers. The number of such stories quickly subsided during February through April as legislation made scant progress and the public focused on the prospect of war in Iraq.

The dividend tax cut became a prime news story again in early May, following reports that House Republican leaders had finally agreed on a specific tax package containing a provision to lower the top tax rate on corporate dividends to 15 percent. Nonetheless, prior to mid-May it remained unclear whether any substantial cut in dividend taxes could pass the Senate. For instance, a May 5th Wall Street Journal article (Murray and McKinnon, 2003) led off with: "The Senate Finance Committee's tax package probably won't include any of the dividend-tax relief that President Bush wants, although it will leave room for a smaller version of the benefit if Republicans can muster support for it." On May 9th, it was reported that the Senate Finance Committee had agreed to include as part of the Senate tax package a much scaled-back benefit. That tax package – which included only miniscule dividend tax relief compared to the original proposal – was expected to see "rougher waters" on the Senate floor (Murray, 2003).

However, a breakthrough was reported on May 15th (Firestone, 2003), specifically, that the previous day "a bipartisan group of senators reached agreement with Republican leaders… adding a crucial Democratic vote to President Bush's plan for eliminating taxes on dividends." Indeed, on May 15th, three Democrats joined 48 Republicans to pass a package under which investors can exclude 50 percent of dividend income from taxes this year and 100 percent of such income in 2004-2006, after which point the tax would be reinstated in full.

Consequently, our second event period begins with May 14th, the day of the first major breakthrough in Senate negotiations. The last obstacle was breached with Senate passage of the compromise legislation early in the morning on May 23rd, but we let the formal event window runs through May 28th, two business days later, when the president signed the bill.[2]

[2] For reference, our event windows roughly coincide with windows 2 and 7 + 8 from Auerbach and Hassett (2005). One could reasonably justify a different starting point for our second event period. On one hand, one could argue for May 6, the day the House Ways and Means Committee approved a $550 billion tax package including a substantial cut in dividend tax rates. On the other hand, we could have chosen May 23

As shown in the chart, stock market gains during the two tax-cut event windows are relatively modest. Over the January 3-9 window, the S&P 500 and the Russell 2000 small-cap index rose about 2 percent and 1 percent, respectively. Over the May 14-28 window, the S&P 500 rose 1.2 percent, while the small-cap index rose 2.7 percent. (Including May 6-13 would boost the second-window returns to 2.9 and 5 percent, respectively.) These moves appear to be swamped by the slump and rebound of share prices around the threat and then realization of war in Iraq. In particular, on March 17th, news that the U.S, Britain and Spain announced an end to their efforts to win UN support for a war, and of an impending televised address by Bush, sent the S&P 500 soaring 3-½ percent that day alone (McKay, 2003). Investors were apparently relieved by the resolution of the uncertainty about if and when the war would commence.

3. Aggregate Market Evidence

Although our empirical analysis of the effects of the 2003 dividend tax cut on the stock market takes on several guises, the methodology is similar in all cases. In this section, we present three tests contrasting the change in value of a portfolio of U.S. common stocks that currently (or prospectively) generate taxable dividend streams with the change in value of a benchmark portfolio of securities during the two event windows. In each case, the tax cut legislation under consideration can be reasonably presumed to have little or no direct effect on the valuation of the benchmark portfolio. Thus, by examining the *relative* returns on U.S. common stocks, we can in principle control for the effects of general economic news and investor sentiment.

Our first two tests compare U.S. stock market returns with returns on foreign equities. The benefits of the dividend tax cut would accrue only to investors subject to the U.S. tax law, and U.S. investors hold a relatively small fraction of foreign equities – between 10 and 15 percent of most European markets (Department of the Treasury and Federal Reserve Bank of New York, 2005). In addition, the benefit of the tax cut to a U.S. owner of foreign stocks is typically less than the benefit received on U.S. company

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as the starting point, following Brown, et al. (2005). In either case our qualitative results would stand; however, using the longer period reduces the power of our tests by widening the confidence bands.

dividends because the U.S. taxpayer's overall tax liability on a foreign stock equals the maximum of the U.S. and foreign country dividend tax rates (Rousslang, 1999).

Figures 2 and 3 present our tests for excess *positive* returns on the U.S. stock market relative to foreign counterparts. The top panels of Figure 2 show the levels of two broad large-cap stock market indexes – the S&P 500 and S&P Euro 350 (IShares) – surrounding the key time periods. The latter index tracks large firms domiciled in continental Europe, covering about 70 percent of the region's market capitalization and spanning 17 exchanges.[3] Over both event windows, shown by the two shaded areas, the performance of European stocks appears similar to or better than that of U.S. stocks.

Although the visual evidence in the top panel is suggestive, this comparison does not control for the "normal" relationship between U.S. and foreign equities. To do so, we assume that the U.S. and foreign stock indexes are influenced by a common (global) market factor, but with different loadings, or sensitivities. We then regress daily S&P 500 returns on daily S&P Euro 350 returns in the six months before and after the event period (July-Dec. 2002 and July-Dec. 2003) to obtain an estimate of the relative beta for the S&P 500 during normal times.[4]

We find a strong positive link between returns in the two markets ($\beta = 0.66$), with fluctuations in foreign equity returns accounting for nearly two-thirds of variation in the S&P 500 returns. Abnormal returns are calculated as the difference between actual and model-predicted S&P 500 returns. These abnormal returns are then cumulated over the relevant time horizon and plotted in the lower panel of Figure 2, normalized to 100 at the beginning of each event window (January 2 and May 13, 2003).

If the U.S. stock market responded to the possibility of a dividend tax cut, then its cumulative abnormal returns would be positive during the event periods. As shown by the thick black line in the lower left hand panel, the cumulative abnormal return from January 3-9 is estimated to be positive but small, about 2 percent. On the other hand, abnormal

[3] An important characteristic of the S&P 350 Euro index is that it is available to the U.S. investors in the form of an exchange-traded fund, which eliminates non-synchronicity problems associated with foreign securities traded abroad. Since the value of the exchange-traded fund is held close to the Index by arbitrage, it does not matter that the exchange-traded fund is largely owned by US investors.

[4] We exclude January-June 2003, the period over which the proposal is announced and debated, because the correlation between returns the two markets' returns was presumably distorted by events. Estimated abnormal returns are similar when model estimation period is 2002, but error bands are somewhat wider.

S&P 500 returns over the May event window are negative, on net. Thus, during the key period where the actual form of the tax cut took shape and was adopted, the S&P 500 did not outperform a comparably broad index of European equities.

Furthermore, daily returns were quite volatile in 2002 and 2003 and had a standard deviation of 1.5 percentage points over our estimation period. Even though much of this variance is explained by movements in the S&P Euro 350 index, the remaining variation is large enough to generate wide standard error bounds, which increase as the event horizon lengthens.[5] The error bounds, shown by the dotted lines, serve as an illustration of the magnitude of the stock market response necessary to overcome statistical doubts about the tax effect, a task that this exercise clearly fails.

As a robustness check, we re-estimate our results using weekly returns data, which smoothes out some day-to-day fluctuations in the market. Although the variance of excess weekly returns is lower, their cumulative level (the thin solid line in the bottom panels) is about the same and still below zero over the May period, again indicating no measurable positive effect of the tax cut.[6]

Small-capitalization stocks, as reflected by the Russell 2000 index, outperformed large-cap stocks over 2003, particularly around May. This observation seemed to contradict to the common wisdom that large-cap stocks, particularly companies paying high dividends now, would seem to stand the most to gain. That view is consistent with a fairly simple valuation framework where future tax policy is uncertain, and thus the tax-liability benefit on distant-future dividends is heavily discounted.[7] Auerbach and Hasset (2005) argue, to the contrary, that there are conditions under which stock prices of immature firms not paying dividends now – and more likely to be raising more equity in the future – could exhibit the strongest positive response to a dividend tax cut. We give some further consideration to their interpretation later in the paper.

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[5] See Campbell, Lo, and MacKinlay, 1997, chapter 4.

[6] We estimate the other excess returns models with the weekly data as well. As the results remain qualitatively similar, we do not show the weekly excess returns separately.

[7] If there is uncertainty about the permanence of the dividend tax cut, stocks with lower dividend yields should experience a smaller price response (see Auerbach, 2002). The dividend yield of the Russell 2000 is substantially lower than that of the S&P 500 firms.

In any case, if small-cap U.S. stocks were positively affected by the tax cut, then one would expect small-cap stocks in the U.S. to have performed unusually well in comparison to foreign small-cap stocks. We examine this hypothesis in Figure 3, where the FTSE Small Cap index is used as a foreign-market counterpart to the Russell 2000.[8] The co-movement exhibited in the top panels suggests that the surge in small-cap stocks was a global phenomenon. This is confirmed by the abnormal returns plotted in the lower panels of the exhibit at the daily (thick solid line) frequency. The abnormal returns are zero over the January event window, and are even marginally negative over the May window, again contradicting the hypothesis that the tax cut was behind the strong U.S. stock market performance.

As an alternative to using foreign markets as a control, we also consider a class of U.S. assets whose dividends were specifically excluded from the 2003 tax cut. Real estate investment trusts (REITs) do not pay taxes on their profits at the corporate level if they distribute at least 90% of taxable profits to their investors. Although such distributions are commonly referred to as "dividends," their tax-free pass-through to investors made them ineligible for the lower dividend tax rate. Consequently, if the dividend tax cut boosted the valuation of (eligible) common stocks, one would expect REIT returns to have underperformed *relative* to the broad market over the event windows; that is, abnormal REIT returns should have been negative.

As shown in the top panels of Figure 4, REIT share prices generally tracked the overall market for most of the event windows, even after the reconciled version of the tax legislation passed the Senate-House conference and the tax treatment of REIT distributions was made clear. Only on the day before the bill was signed into law did REIT shares decline sharply, and then only temporarily. The lower panels of Figure 4 examine the cumulative abnormal REIT returns, estimated relative to S&P 500 returns. Abnormal returns are near zero during the event windows and well within the estimated error bounds and are modestly *positive* by the end of July. Having found little measurable effect of the dividend tax cut on aggregate U.S. stock valuations, in the next section we attempt to

[8] The FTSE Small Cap index tracks stocks trading on the London stock exchange, which creates a non-synchronicity problem. To address this issue, in estimating a model for abnormal returns, we regress Russell 2000 returns for calendar day t on FTSE Small Cap returns for calendar days t and $t+1$; we also estimate a weekly version (not shown for brevity).

determine whether the legislation had any significant cross-sectional effects on U.S. stock valuations.

4. Cross-sectional Evidence

In the simplest of worlds without uncertainty, and where corporate net income is eventually paid out as dividends, a once-and-for-all cut in the dividend tax rate would have a similar positive valuation effect on all common stocks, regardless of their current dividend yield. Perhaps the most obvious complication is the recognition of uncertainty about the permanence of any tax reform, given the frequency of such changes over the past 75 years. Moreover, the 2003 law and its early incarnations explicitly embedded sunset provisions. Indeed, the reduced dividend tax rate will expire in 2008, absent additional legislative action. Together with growing budget deficits and changeable political priorities, the sunset provision undoubtedly added to the usual degree of uncertainty about the duration of the benefit.[9]

Uncertainty regarding the permanence of a dividend tax cut should dampen the positive valuation effect on all stocks, but more so on stocks for which the lion's share of dividends will be paid far into the future – stocks that currently pay little or no dividend. Accordingly, we look for cross-sectional effects of the proposed dividend tax cut by splitting our sample of more than 2800 firms into four groups based on their dividend yield in 2002, shown in Table 1. As noted, just over half of the firms did not pay any dividend in 2002. We define high-dividend firms as those for which the ratio of 2002 dividends to end-of-year price ("dividend yield") is greater than 3 percent, about a fifth of the dividend-payers. Medium-dividend firms have a dividend yield between 1 and 3 percent, while low-dividend firms are those with a dividend yield of less than 1 percent. Summary statistics for each group are presented in Table 1. The zero-dividend firms are notably smaller, more investment intensive, and less debt reliant than the other groups.

The top panels of Figure 5 show the cumulative realized returns for each group (equal-weighted) over the two event periods. The cumulative return ranged between 1 and

[9] Low-dividend firms tend to be concentrated in growth industries, where firm survival and thus eventual payment of dividends is more uncertain. Consequently, low-payout firms may be construed to have riskier dividend streams inducing risk-averse investors to discount some of the tax benefit and generating a second-order effect on the relationship between payout rates and response to a tax cut.

2 percent during the January 2003 event window for each group. During the May event period, the high-dividend and zero-dividend portfolios logged gains of approximately five percent, somewhat more than the other portfolios.[10] Because risk characteristics probably vary systematically across these groups, we test for differential performance by computing abnormal returns using the Fama-French three-factor model estimated over a twelve month period that includes the six months prior and subsequent to the event period. Conclusions are insensitive to choice of the estimation period.

As seen in the bottom panels of Figure 5, the high-dividend portfolio generated abnormal returns of around 1 percent in the January window and 2-3/4 percent in the May window. Interestingly, in the latter period, it appears that high-dividend stocks began to diverge from low- and medium-dividend stocks on May 14th, a pattern that persisted until the day before the legislation was signed. As Table 2 shows formally, in columns 3 and 4, the abnormal returns of the high-dividend firms over both event windows are statistically different from zero and from the abnormal returns of the low-dividend firms. Even so, Figure 5 also shows that this performance differential is apparently not persistent, but had dissipated by July.[11]

We test for whether the performance differential between high- and low-dividend stocks is spurious by examining the abnormal *bond* returns for the two groups of firms. These results are also reported in Table 2 (panels A and B) and show no evidence of abnormal bond returns for either group, suggesting that the equity performance gap is driven by the tax event which favors firms' equity holders but not debt.

Another key feature of Figure 5 is that firms at the other end of the payout spectrum – zero-dividend firms – logged positive abnormal returns of 1-1/2 percent in the May window, which are marginally statistically significant. As mentioned earlier, these results seem to present a puzzle. The positive abnormal returns on stocks with higher current dividend yield is consistent with theoretical predictions of the effect of a *temporary* tax cut for firms currently paying dividends. Yet, the out-performance of zero-dividend

[10] Results are qualitatively similar for value weighting.

[11] One interpretation is an appeal to temporary illiquidity; a quick response by alert tax-sensitive investors might have been eventually arbitraged away by nontaxable investors making offsetting portfolio changes.

stocks relative to low-dividend stocks over the tax-cut event window casts some doubt on that interpretation.

One possibility, consistent with our earlier evidence on the aggregate small-cap stock performance, is that the abnormal returns on zero-dividend stocks are spurious. In particular, it appears from the chart that, unlike high-dividend firms, the abnormal performance of zero-dividend firms is not tied to the event period, but rather runs almost continuously from mid-April through July. This suggests that something else may be driving this result; for instance, the risk-factor model used to estimate normal returns for these firms could be substantially mis-specified.[12]

Auerbach and Hassett (2005) suggest another possibility, laying out conditions under which share prices of zero-dividend firms would be the most sensitive to the proposed tax cut. Their main assumption is that zero-dividend firms are likely to be immature firms prone to issuing new equity shares in the future due to an inability to satisfy large investment needs with internally-generated funds or by issuing interest-bearing debt. In this case, current shareholders would reap the windfall on dividends to be paid on the shares yet to be issued, thus inflating the response of the prospective issuer's current market value to a cut in dividend taxes.[13]

One approach to testing this explanation is to identify those zero-dividend firms that are likely to truly be equity-issuance dependent and to compare their abnormal returns to other zero-dividend firms for which this story seems less plausible. We show one such experiment in Figure 6. Here, we compare the abnormal returns of two types of zero-dividend firms – those that used some of their cash to repurchase shares in recent years and those that did not repurchase shares. Our working hypothesis is that firms that have been repurchasing shares are less likely to be cash-flow constrained and thus less likely to be anticipating a need to issue equity in the future.

As can be seen, there is virtually no difference between the abnormal performance of zero-dividend firms that have repurchased shares and those that have not done so. Furthermore, as shown in Table 3, an examination of actual equity issuance by zero

[12] We tried testing whether the zero-dividend group also experienced excess bond returns, but only a small and non-representative fraction of those firms have bonds outstanding.

[13] Of course, the benefits of a temporary tax cut are still smaller than from a permanent cut since the tax break may expire before a firm decides to pay dividends.

dividend firms *since* the tax cut indicates that the split by repurchase activity is a valid instrument for future equity issuance: zero-dividend firms that have recently bought back their stock were less likely to issue equity compared to (zero-dividend) firms that had not repurchased shares. Also, among firms issuing new shares, the quantity of equity issued differed little between repurchasers and non-repurchasers (second row of Table 3). This result casts further doubt on the equity-dependence rationale for the positive abnormal event-window returns by zero-dividend firms. Indeed, zero dividend firms were only marginally more likely to issue equity over this time period than firms with dividends.

5. Conclusions

In summary, we find little if any imprint of the dividend tax cut news on the value of the aggregate stock market. U.S. large-cap and small cap indexes did not outperform either their European counterparts or REIT stocks during the event windows, regardless of how broadly those windows are defined. The tax cut did appear to have statistically significant, cross-sectional effects on stock valuations, with high-dividend firms receiving a boost at the expense of low-dividend firms, although this effect seems to have been short-lived. Finally, we find evidence of positive excess returns on zero-dividend stocks, but further scrutiny of the time-series pattern of these excess returns and analysis of these firms' characteristics suggests that these excess returns were probably unrelated to the dividend tax cut.

Of course, as with any event study, ours is subject to the usual caveats, the most significant being our inability to perfectly control for the myriad other factors that may have influenced U.S. stock valuations during or around the event windows. Regarding our aggregate results, there is also the problem of fairly wide confidence intervals that comes from having a somewhat diffuse event; one cannot rule out the existence of a small valuation effect with 95 percent confidence, though one can be reasonably certain that the market was not boosted by more than a four or five percent.

Finally, we did not attempt to determine *why* the tax cut might have had little impact. As suggested earlier, one likely possibility is that investors discounted the effect on future dividends owing to the built in sunset provisions, not to mention the uncertainty regarding the permanence of any tax regime. The other mitigating factor is that a

substantial proportion of U.S. stocks is held in accounts or by entities for which the lower dividend tax rate does not apply.

References

Alan J. Auerbach, "Taxation and Corporate Financial Policy," in A. Auerbach and M. Feldstein, eds., Handbook of Public Economics, vol. 3 (Amsterdam: North-Holland/Elsevier, 2002), pp. 1251-1292.

Alan J. Auerbach and Kevin A. Hassett, "The 2003 Dividend Tax Cuts and the Value of the Firm: An Event Study," NBER Working Paper no. 11449 (June, 2005).

Allen, Mike and Dana Milbank, "President to Seek Dividend Tax Cut," *Washington Post*, January 3, 2003.

Brown, Jeffrey R., Liang, Nellie, and Scott Weisbenner, "Executive Financial Incentives and Payout Policy: Firm Responses to the 2003 Dividend Tax Cut," NBER Working Paper no. 11002 (December, 2004).

Campbell, John Y., Lo, Andrew W., and A. Craig MacKinlay, *The Econometrics of Financial Markets*. Princeton University Press: Princeton, NJ, 1997.

Raj Chetty and Emmanuel Saez, "Dividend Taxes and Corporate Behavior: Evidence from the 2003 Dividend Tax Cut," *The Quarterly Journal of Economics*, 120, no. 3 (August 2005), pp. 791-833.

Department of the Treasury and Federal Reserve Bank of New York, "Report on U.S. Portfolio Holdings of Foreign Securities as of December 31, 2003," (March, 2005).

Dhaliwal, Dan, Linda Krull, and Oliver Zhen Li, "Did the 2003 Tax Act Reduce the Cost of Equity Capital?" mimeo (June, 2005).

Firestone, David, "With Plan for State Aid, Senate Republicans Gain Crucial Democratic Vote on Tax Cut," *New York Times*, May 15, 2003

Fisher, Peter R., "Paying Dividends: How the President's Tax Plan will Benefit Individual Investors and Strengthen Capital Markets," in Hearing before Subcommittee on Oversight and Investigations of Committee on Financial Services, U.S. House of Representatives, 108 Cong. 1st Session. (Government Printing Office, 2003), pp. 4-17.

Donald J. Rousslang, "Foreign Tax Credit" in J. Cordes, R. Ebel, and J. Gravelle, eds. *The Encyclopedia of Taxation and Tax Policy* (Urban Institute Press, 1999).

McKay, Peter A., “Stocks Surge on Clarity Over War with Iraq,” *Wall Street Journal*, March 18, 2003.

Murray, Shailagh, “Senate Approves Tax Package: Dividend Repeal Survives in Scaled-Back Version,” *Wall Street Journal*, May 9, 2003.

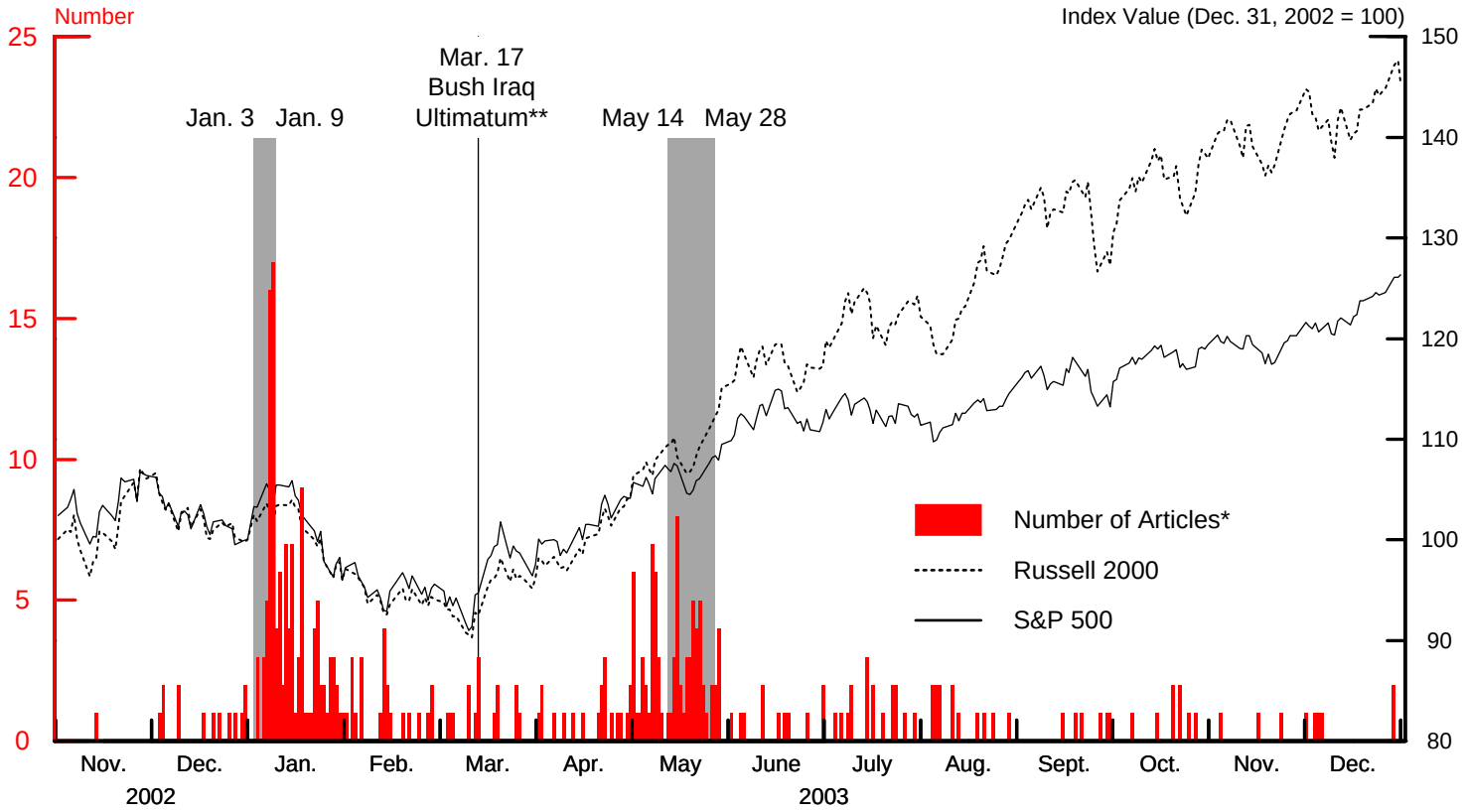
Murray, Shailagh, and John D. McKinnon, “Senate Panel Unlikely to Include Dividend-Tax Relief in it Plan,” *Wall Street Journal*, May 5, 2003.

Poterba, James. "Taxation And Corporate Payout Policy," American Economic Review, 2004, v94(2,May), 171-175.

Tax Reform Panel "The final report of the President's Advisory Panel on Federal Tax Reform", 2005, www.taxreformpanel.gov/final-report.

Figure 1

Stock Prices and News on Dividend Tax Cut



*Articles concerning dividend tax cut in 15 largest US newspapers.

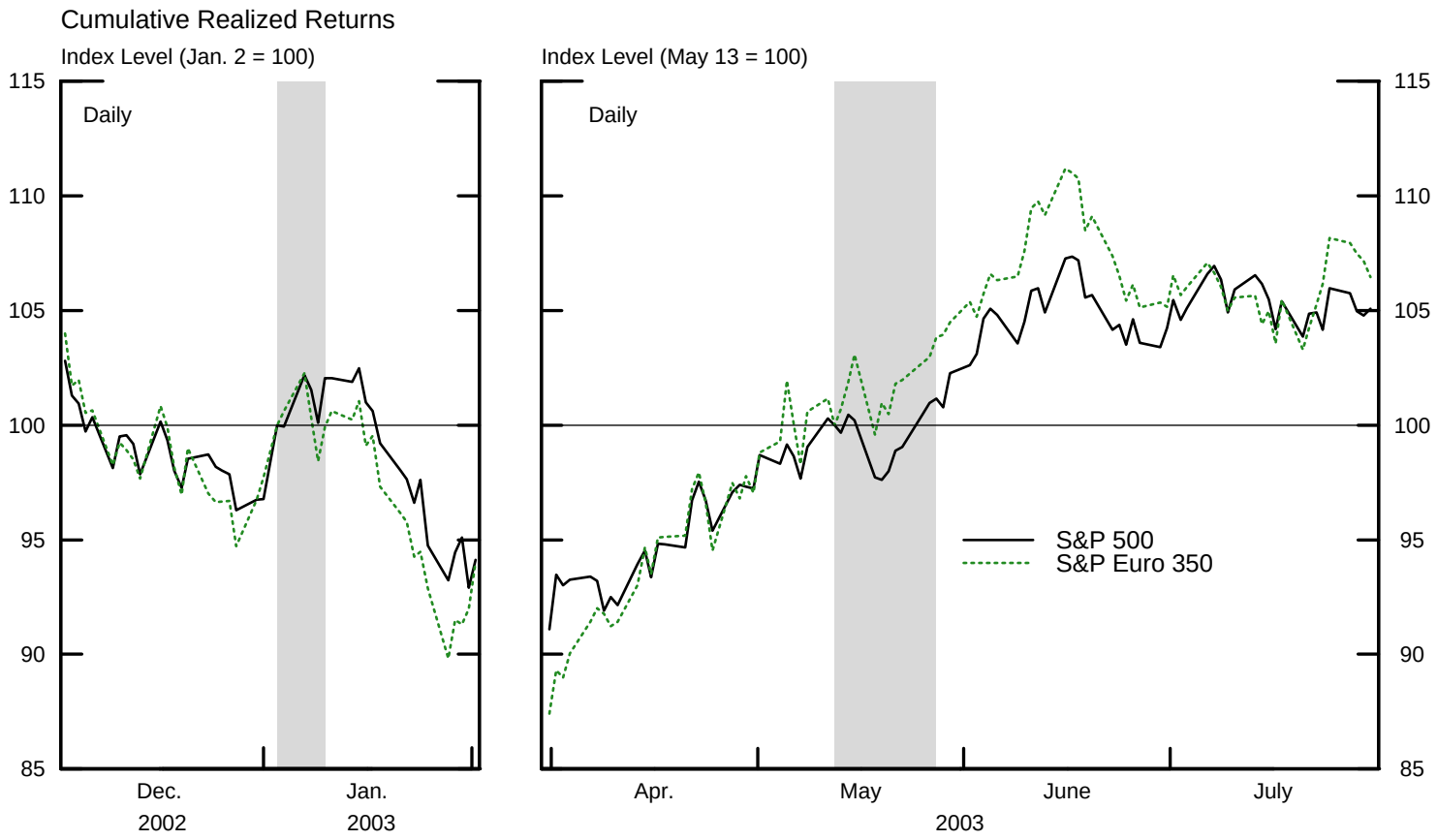
**President Bush warns Saddam Hussein of 48-hour deadline for invasion.

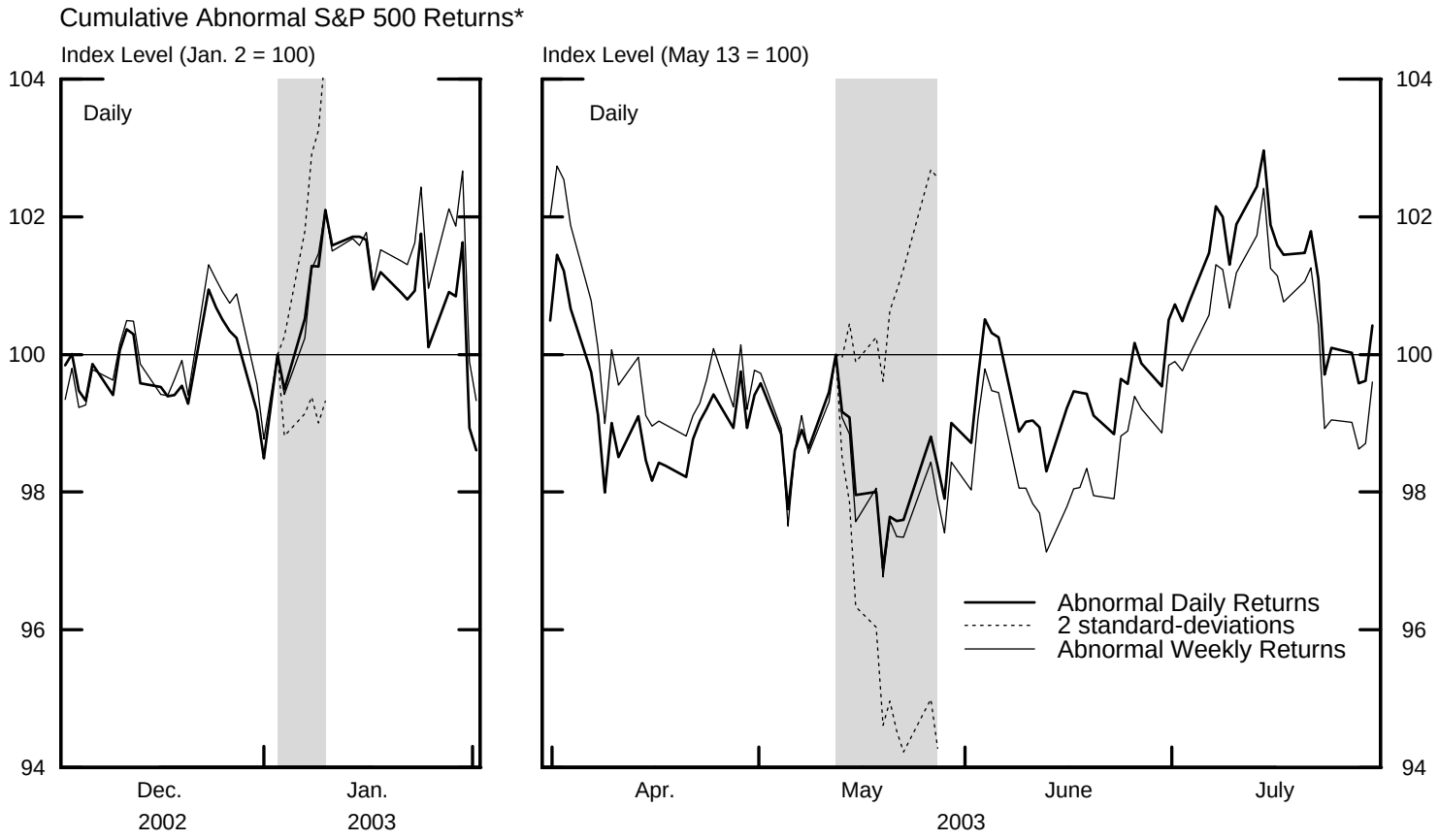
Key Event Dates for Dividend Tax Cut

Date	Description
1/3/2003	Washington Post article
1/7/2003	Bush announces proposal
5/6/2003	Ways and Means passes version
5/9/2003	House passes version
5/15/2003	Senate passes version
5/23/2003	Reconciled version passes conference
5/28/2003	President signs

Figure 2

S&P 500 versus S&P Euro 350

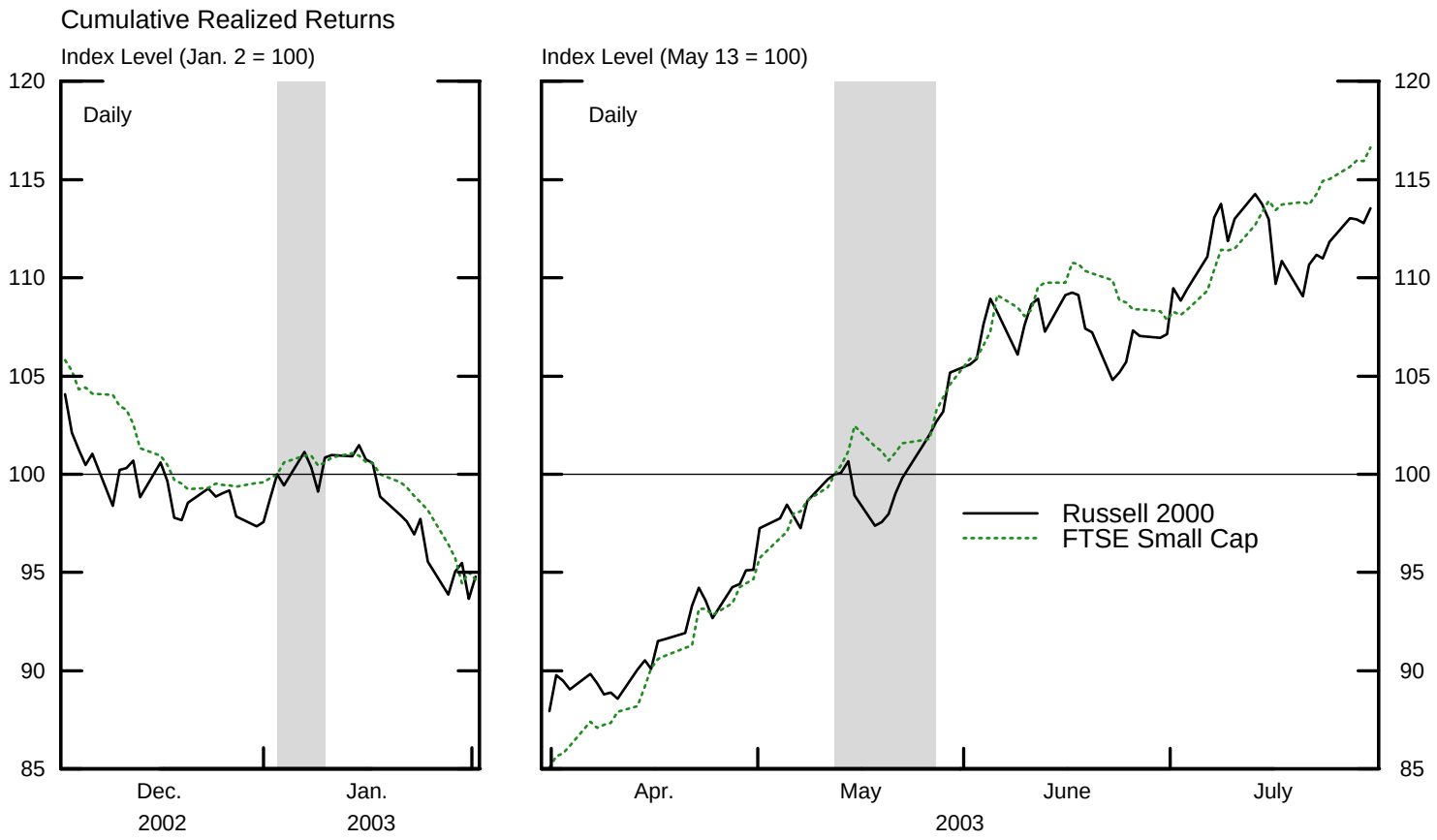


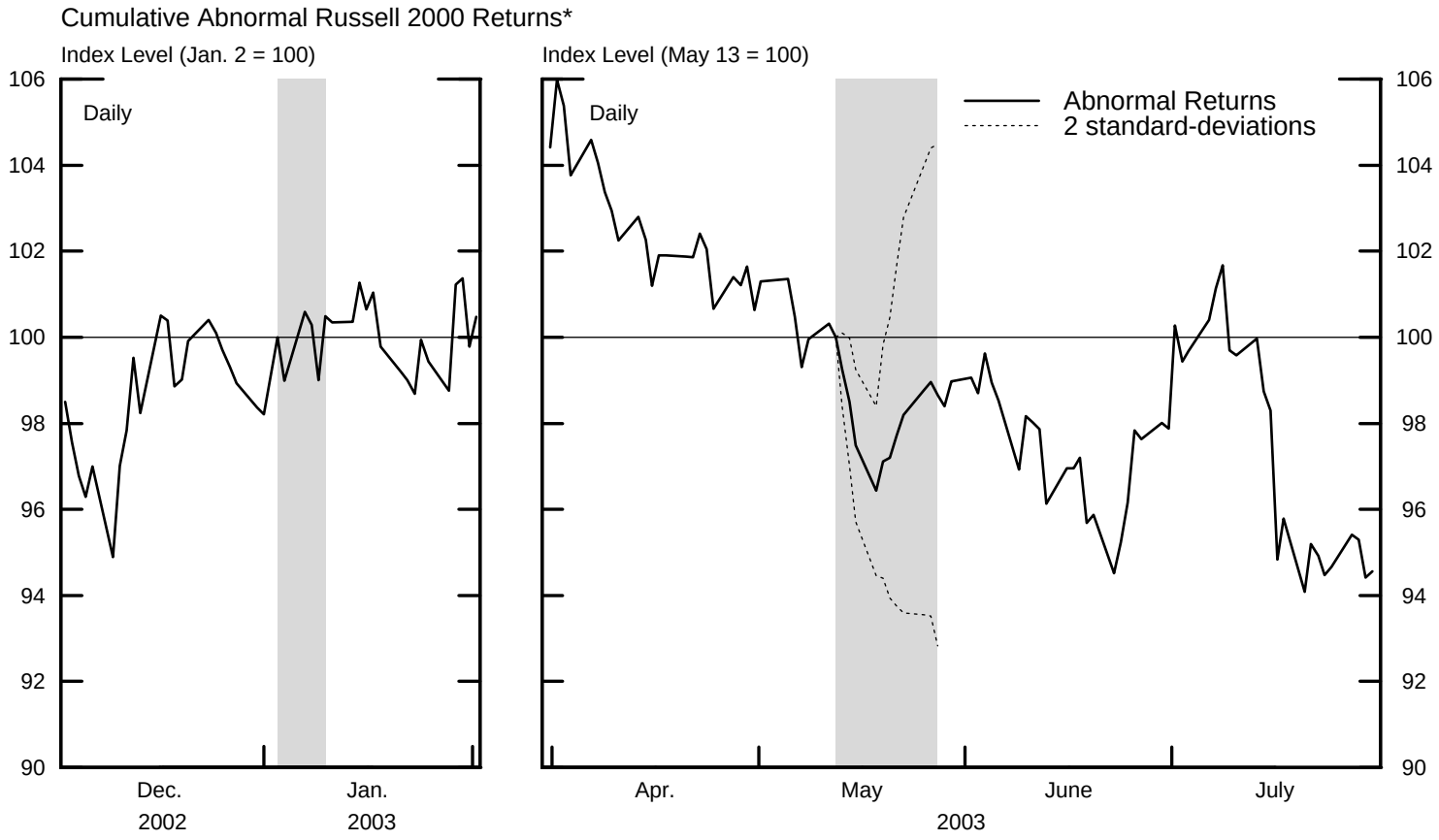


*Out of sample excess returns based on the contemporaneous regression: S&P 500 returns = a + b (Euro 350 returns) estimated over the second halves of 2002 and 2003.

Figure 3

Russell 2000 versus FTSE Small Cap

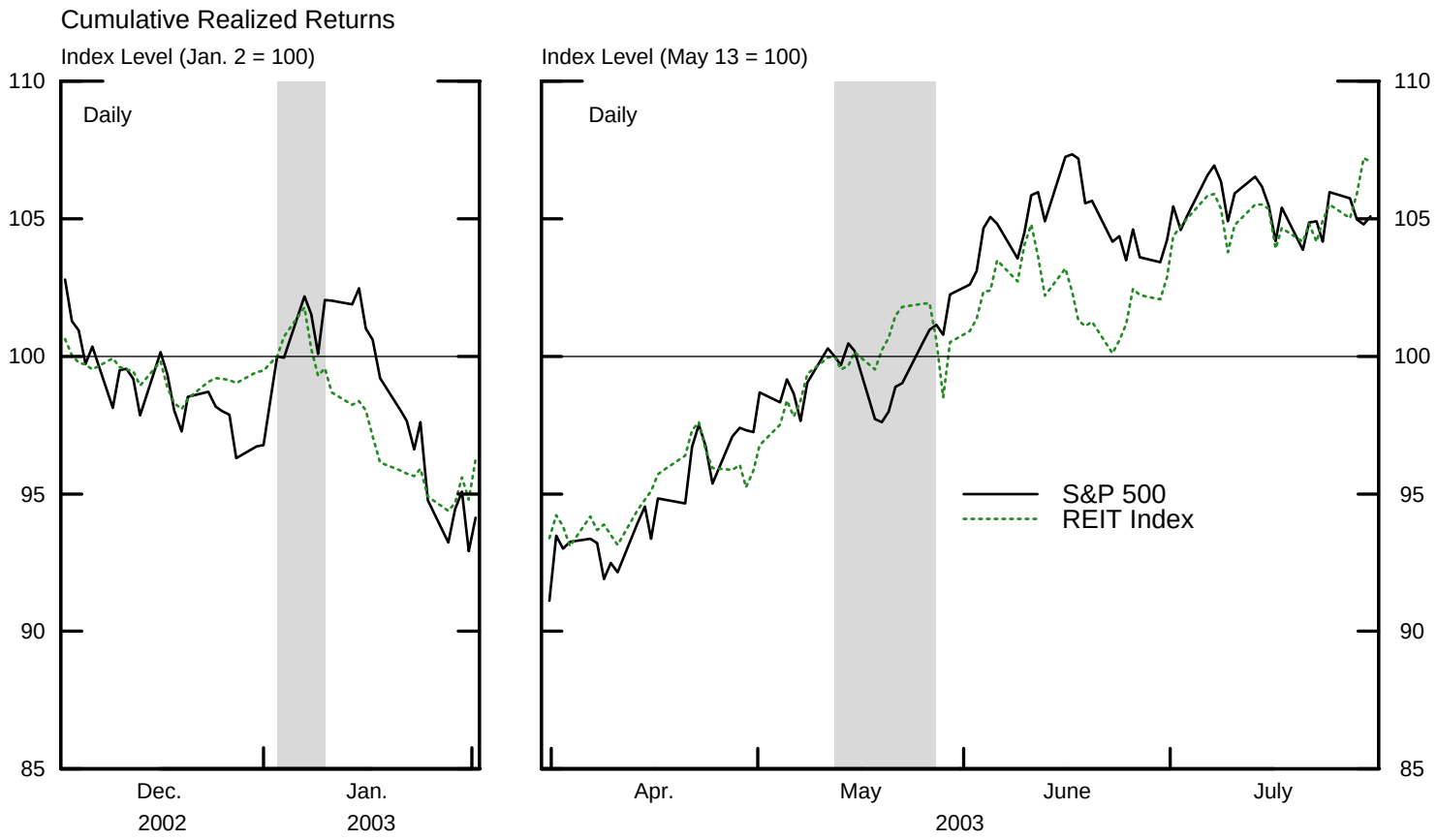


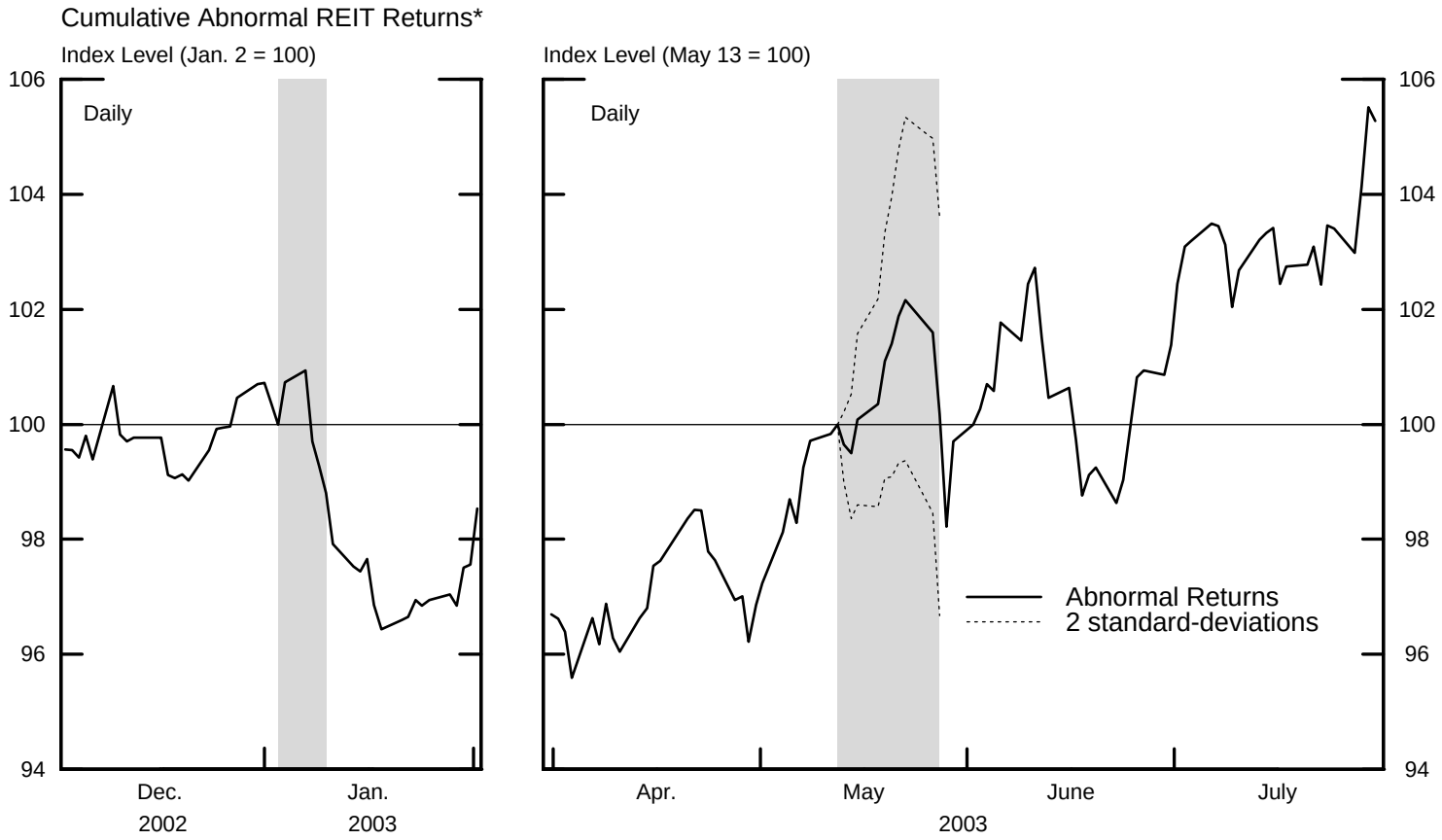


*Out of sample excess returns based on the contemporaneous regression: Russell 2000 returns = a + b (FTSE Small Cap returns) estimated over the second halves of 2002 and 2003.

Figure 4

S&P 500 versus Bloomberg REIT Total Return Index

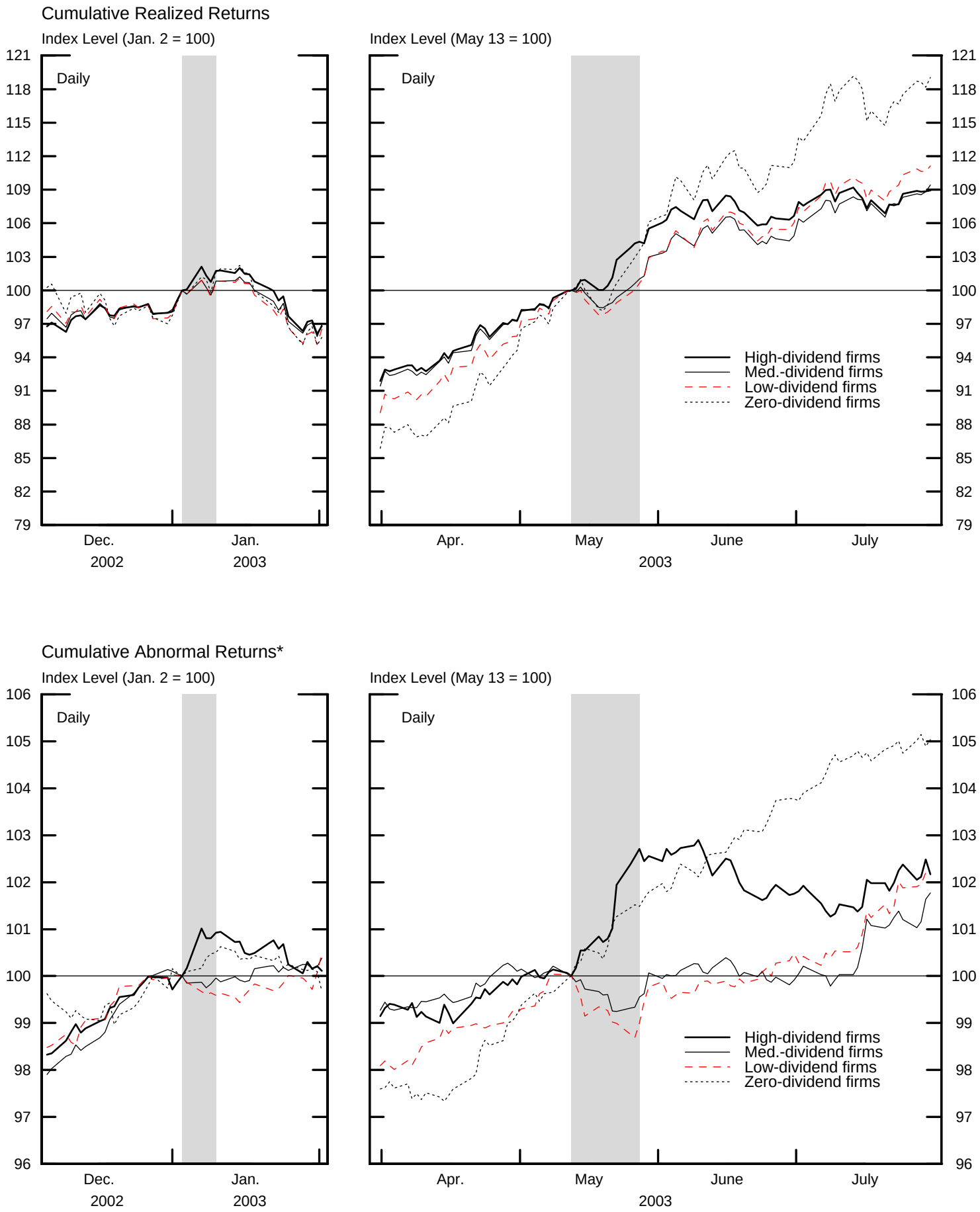




*Out of sample excess returns based on the contemporaneous regression: REIT returns = a + b (S&P 500 returns) estimated over the second halves of 2002 and 2003.

Figure 5

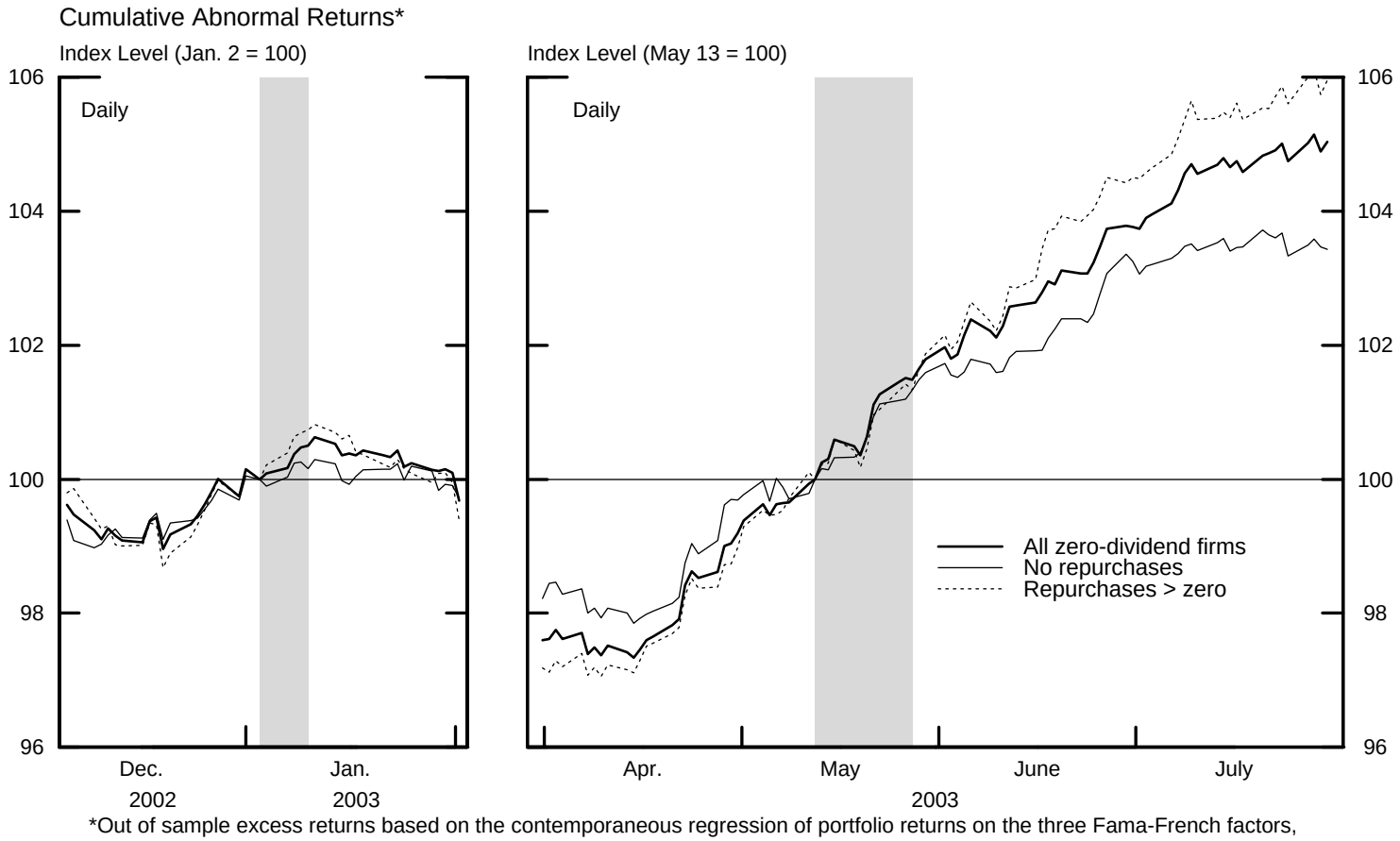
Stock Returns by Dividend Intensity



*Out of sample excess returns based on the contemporaneous regression of portfolio returns on the three Fama-French factors, estimated over the second halves of 2002 and 2003.

Figure 6

Zero-Dividend Breakout



*Out of sample excess returns based on the contemporaneous regression of portfolio returns on the three Fama-French factors, estimated over the second halves of 2002 and 2003.

Table 1 - Description of Portfolios

Portfolio	Number of Firms	Median Assets ($ millions)	Median Dividend Yield (percent)	Median Capx / Net PPE (percent)	Median Cash* / Assets (percent)	Median LT Debt / Assets (percent)	Median Csh Flow / Capx (percent)
High-Dividend	256	1351	4.1	11.8	3.5	22.8	161.0
Med-Dividend	627	1559	1.8	13.7	4.8	14.4	212.2
Low-Dividend	444	1525	0.6	16.2	5.9	14.2	209.0
Zero-Dividend	1515	369	0.0	23.5	13.8	8.0	161.0

* Cash includes short-term investments.

All firm statistics from year-end 2002 except Cash Flow / Capx, which is the median ratio of 1999, 2000, and 2002.

Data is merged sample from Compustat and CRSP, filtered for public U.S. firms, excluding REITs and open-end funds.

Table 2A - Tests of Significance - January

Portfolio	C.A.R.* Jan 2 - 9 (percent)	S.E. Residuals from Regression	P - diff than zero	P - diff than low div.
High-Dividend	1.23	0.0024	0.0192	0.0183
Med-Dividend	-0.15	0.0021	0.3880	0.3418
Low-Dividend	-0.45	0.0022	0.2026	
Zero-Dividend	0.30	0.0029	0.3375	0.2007

Table 2B - Tests of Significance - May

Portfolio	C.A.R.* May 13 - 28 (percent)	S.E. Residuals from Regression	P - diff than zero	P - diff than low div.
High-Dividend	2.70	0.0024	0.0004	0.0002
Med-Dividend	-0.52	0.0021	0.2268	0.2883
Low-Dividend	-1.09	0.0022	0.0691	
Zero-Dividend	1.51	0.0029	0.0578	0.0158

Table 2C - Tests of Significance - May - Sample with Public Bonds Outstanding

Return Type	C.A.R.* May 13 - 28 (percent) High Dividend Firms	C.A.R.* May 13 - 28 (percent) Low Dividend Firms	P - abnormal returns high div. diff than low div.***
Equity Returns*	4.98	2.02	0.0060
Bond Returns**	-0.05	-0.22	0.4897

*Out of sample excess returns based on the contemporaneous regression of equity returns on the three Fama-French factors, estimated over the second halves of 2002 and 2003.

** Out of sample excess returns based on the contemporaneous regression of bond returns on the change in yield for treasury notes of comparable maturity and change in spread for a corporate bond index of comparable rating.

*** From a regression of abnormal returns on a constant and a dummy variable for dividend portfolio type.

Table 3 - Equity Issuance Proportions for June 2003 to August 2005

	Firms with No Dividends			Firms with Dividends
	Repurchases	No Repurchases	All	
Number of Firms	992	737	1729	1439
Percent Issuing Equity	11%	17%*	14%	11%
Newly Issued Shares as Percent of 2002 Shares (median among issuers)	21%	18%	20%	13%

*Test of difference in proportions between repurchasers and non-repurchasers significant at 1% level.
Equity issuance data from SDC.